oxide coat is a case of solid diffusion, and as such it bears the same relation to the diffusion of liquids, that the viscosity of solids bears to the viscosity of liquids. The two phases (solid, liquid) of each phenomenon are to be correlated in ways essentially alike. The available stress, as compared with the available instability at a given temperature, determines the time character of the result.

CARL BARUS.

Physical Laboratory, U.S. Geological Survey,
Washington, D.C.

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## *CHRISTOFORUS HENRICUS DIEDERICUS BUYS BALLOT.*

BUYS BALLOT was born on October 10, 1817, at Kloetinge in Zealand; was a student in arts and the natural sciences at the University of Utrecht, where he first became Lector of Physics and Chemistry in 1844, and then successively Professor of Mathematics in 1847, and of Experimental Physics in 1870, which latter chair he ceased to hold in November 1887 on completing his fortieth year as Professor. He was appointed Director of the Royal Meteorological Institute of the Netherlands in 1854, and held this position with great ability and distinction till his death on Monday, the 3rd of the present month.

His first contribution to science was a paper on a chemical subject in 1842, this being a science of which he was Lector at the time; but soon thereafter he turned his attention to meteorology, which he emphatically made the business of his life. The following are among the earlier of his papers on the subject, and they are, it will be seen, very significant of his future work:—"On the Influence of the Rotation of the Sun on the Temperature of our Atmosphere," in 1846; "On the Importance in Meteorology of Deviations from the Mean States of the Atmosphere," in 1850; "Results of the Observations of 1849 and 1850 in different places in Holland," in 1851; and "On Synchronous Representations of Weather Phenomena," in 1854.

In these early times of meteorology, when instruments and modes of observing still greatly needed the guiding hand of science towards the founding of international meteorology, Dr. Buys Ballot was wisely led to attempt the construction of no general isobaric and isothermal maps in investigating storms and other weather phenomena, but contented himself in investigating weather disturbances by representing them over the surface of Europe by means of deviations from the means, or averages, of the places represented. In this mode of working he made several of his more important contributions to meteorology, and out of it developed the system of storm warnings he issued for Holland. In this connection his barometric and thermometric means for a very large number of places over Europe will long be a standard work. Of these contributions, unquestionably the most important is that known as BUYS BALLOT'S LAW OF THE WINDS, which states the relation between the direction of the wind and the distribution of atmospheric pressure at the time the wind is blowing. This relation was further developed by Dr. Buchan in 1869, in his paper on the mean pressure of the atmosphere and prevailing winds of the globe, in which it was shown that the prevailing winds of all climates are simply the result of the distribution of pressure.

One of the most exhaustive discussions of the influence of the moon on weather was made by Dr. Ballot. The discussion covered a period of about a century, and he showed that the longer the period the closer do the cases for or against any such influence approach equality. Subsequent to Maury, Dr. Ballot was one of the earlier and most energetic and successful workers in maritime meteorology, and his meteorological charts of the routes of Dutch ships over the great oceans is a standard work. Dr. Ballot also took an active and efficient part in the Meteorological Conferences and Congresses held at intervals from 1872 to 1888, which have brought about a greater uniformity in meteorological observations and discussions than previously existed. He was chosen, by the first Congress, President of the Permanent Committee. Among his last works was the proposal of a method of developing and representing the variability of the weather and climates by the values of the deviations of the daily observations from the averages, irrespective of sign.

The great merits of his indefatigable services to science, but more particularly to meteorology, were recognized by his being made LL.D. of Edinburgh University, Knight of the Order of the Netherland Lion, Commander of the Order of Franz Joseph of Austria, and of St. James of the Sword of Portugal, and Knight of second class of the Prussian Order of the Crown. But above all, his ever readiness in every degree to oblige, the genial sunshine of his face, and his lovableness, make his death to be felt by many of us as a sharp personal bereavement.

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## *NOTES.*

ON Tuesday evening the Cambridge University Natural Science Club and the Master of Downing (Dr. Alex. Hill) gave a *conversazione* at Downing Lodge, at which 260 guests, including many distinguished residents and non-residents, were present. The several scientific professors were very liberal in lending the treasures from their museums, and as this is the first entertainment of the kind which has been given in Cambridge, many objects of great historic interest, such as Babbage's calculating machine, Cavendish's apparatus, &c., were exhibited. Artificial silk was spun, quartz filaments drawn, smokeless gunpowder and other scientific novelties shown. One of the most interesting exhibits was a series of Egyptian heads unwrapped from their mummy cloths, and artfully "restored" by Prof. Macalister. A very attractive feature of the entertainment was an address by Dr. Lauder Brunton, who had much that was interesting to say about his recent experiences in India. Mr. Gardiner illustrated the dispersion of seeds by the aid of the limelight and boxes of seeds of various kinds suspended from the ceiling.

THE annual general meeting of the Geological Society of London will be held to-morrow (Friday) at 3 o'clock, and the Fellows and their friends will dine together at the Criterion Restaurant at 7.30 p.m.

BEFORE the next ordinary meeting of the Royal Microscopical Society, it will have moved its quarters from the rooms hitherto occcupied by it in King's College, which are now required for the purposes of the College, to 20 Hanover Square. The ordinary meetings will in future be held on the third instead of the second Wednesday in the month, and the annual meeting in January instead of February. The Quekett Microscopical Club has also transferred its place of meeting to 20 Hanover Square since the commencement of the year.

WE regret to have to record the death of Sir Robert Kane, F.R.S. He died after a short illness on Sunday, the 16th inst., at his residence in Dublin.

THE fine buildings of the University of Toronto were almost wholly destroyed by fire last Friday. The flames were unfortunately fanned by a strong wind, and the fire spread so rapidly that hardly anything could be saved. A small number of specimens in the museum, and some of the scientific apparatus, were brought out by students, but they were mostly broken while being removed. The Canadians are justly proud of the University of Toronto, and will no doubt provide for it even more splendid buildings than those which are now in ruins.

SIGNOR SELLA's views of the Caucasus have been on exhibition in the Royal Geographical Society's map-room since Friday last, and will continue to be exhibited till the close of the month.

WE print elsewhere Prof. David P. Todd's record of work done by the U.S. Scientific Expedition to West Africa, 1889, of which he was director. This is one of several bulletins printed on board the U.S.S. *Pensacola*.

IN the engineering notes from North-West India, of *Engineering* of the 14th inst., we find a most interesting account of the testing of the Chenab Bridge, near Mooltan. This bridge consists partly of seventeen spans of 200 feet, which are of mild steel throughout. These trusses are of the Whipple-Murphy type, with raking heel posts; the ties are at an angle of 45°, and consequently the depth is a tenth of the span. In previous girders of this type, made in iron, the deflection under full loads was usually less than 0·0004 of the span, while here 1½ inch, equal to 0·0006, obtains throughout, and in each case the observed permanent set is less than ⅛ inch in the whole thirty-four girders in the viaduct. *Engineering* observes that "there is thus no question of bad workmanship either in the pieces sent out from home or in the erection at site, and it is very clear that steel structures, especially when so light as these spans, which only weigh, with corrugated floor and all bearing and expansion gear, 220 tons each, are necessarily more sensitive than those of iron."

THE new number of the *Internationales Archiv für Ethnographie* (Band ii. Heft vi.) opens with a valuable paper, by Prof. G. Schlegel, of Leyden, on Siamese and Chinese-Siamese coins. This contribution is illustrated by a coloured plate. Of the other papers, the most important is an account of the Nanga of the Fiji Islands, by Mr. Adolph B. Joske, Fiji. These remarkable stone inclosures, now ruined, were first brought to the notice of anthropologists by the Rev. Lorimer Fison, of the Australasian Wesleyan Mission. Three of them have been visited by Mr. Joske, and he is thus enabled to give the plan of an inclosure drawn from his own measurements. His paper has been edited by Baron Anatole von Hügel, who adds instructive notes. In another paper, Prof. Giglioli gives an interesting account of a remarkable stone axe and stone chisel in use among the Chamacocos of South-East Bolivia.

WE are glad to observe that in the Ceylon estimates for the current year provision is made for an increased vote of Rs. 10,000 for archæological purposes. Sir Arthur Gordon, in explaining the vote, said, "It is proposed to make some systematic examination of the interesting remains at Sigiri, and to commence on a modest scale, before the rapidly disappearing monuments of the past have altogether perished, a species of archæological survey resembling that carried on in India. Such an examination should be completed in about three years, and the vote is proposed to cover the salary and travelling expenses, for 1890, of the officer selected for the purpose."

A LARGE and rich collection of specimens of amber, illustrating all the varieties found in the amber district of North Germany, has lately been sent to the New York School of Mines by one of its earliest graduates, Mr. H. A. Demelli, now a resident of Berlin. At a recent meeting of the New York Academy of Sciences, this collection was examined with great interest by the members, and Dr. Newberry, the President, read an instructive paper on amber. After the reading of the paper, Dr. N. L. Britton spoke of the occasional occurrence of amber in New Jersey, in connection with the lignites so abundant in the Cretaceous and Eocene beds; and Mr. George F. Kunz exhibited several specimens of American amber, one of which —from Mexico—excited much admiration. Mr. Kunz said that during the last fifteen or twenty years travellers had occasionally brought specimens of a very remarkable amber from some locality in Southern Mexico. The only thing known about this amber is that it is taken to the coast by natives, who report that it occurs in the interior so plentifully, and in such large pieces, that they use it for making fires. It is of a rich, deep golden yellow, and, when viewed in different positions, it exhibits a remarkably green fluorescence, like that of certain petroleums. It is perfectly transparent, and, according to Mr. Kunz, even more beautiful than the famous so-called opalescent or green amber found at Catania, Sicily.

A FRESH illustration of the way in which foreign plants may become "weeds" under new and favourable conditions is afforded by *Melilotus alba* in the Western States of America. It was introduced a few years ago as a garden-plant, and has spread so rapidly in the rich bottom-lands along the Missouri River that, according to *Garden and Forest*, it is fast driving out the sunflower and other native weeds. It is commonly called "Bokhara clover."

AT the meeting of the Scientific Committee of the Royal Horticultural Society, on February 11, Dr. Oliver and Prof. Scott presented an interim report on the investigations undertaken by them respecting the effects of London fogs on plants under glass. Specimens of orchids affected by fog had been received from Messrs. Veitch and Son, Chelsea; and of tomato plants from the superintendent of the Royal Horticultural Society's gardens at Chiswick. On the suggestion of the chairman, it was decided that the chemical constituents of London fog should be investigated, and that the exciting causes of the injury to plants should be traced. In order that the work might be carried out under advantageous circumstances, it was resolved that application should be made to the Government Grant Committee of the Royal Society for pecuniary aid.

AT the same meeting of the Royal Horticultural Society's Scientific Committee, Mr. McLachlan drew attention to a disease in sugar-cane at St. Vincent, where in some localities about 25 per cent. of the crop would be lost this year. According to Mr. Herbert Smith, who had examined the canes, a beetle of the family Scolytidæ, and the larva of a moth, were concerned. It is probable that the beetles enter the canes only by the exit holes of the moths, and that the moth is a widely spread species, already known to attack sugar-cane in other countries.

IN the January number of the *American Naturalist* Mr. R. E. C. Stearns begins what promises to be an interesting series of papers on the effects of musical sounds on animals. His first paper deals with "dogs and music." From his friend, Prof. George Davidson, of California, he has received the following instance:—"A small black-and-tan named 'Bessie,' belonging to Mr. A. B. Corson, of North Fifth Street, Philadelphia, will, on hearing 'Shall we meet beyond the river?' sung, throw her head back and set up a most dismal howl, while the tears will run down her cheeks. If the tune is played solemnly on an organ and no word spoken, the same thing will occur; but if any of the words are spoken, with not the slightest musical intonation, she will run to the speaker, and beg and plead in her own way, and do everything but speak, to have it stopped."

THE *Annalen der Hydrographie und Maritimen Meteorologie* for December, published by the German Admiralty, contains an interesting discussion by Dr. W. J. van Bebber, on the dependence of the force of the winds upon the surface over which they blow. It is generally admitted that the winds at sea are, under similar circumstances, stronger than on land; but actual comparisons, such as the author has undertaken, are not frequently made. He has chosen two stations on the coast—viz. Cherbourg and Hurst Castle—having a different position with regard to the sea, but at which the observations are made under nearly similar conditions. The results of careful comparisons under eight points of the compass, for a period of several years, plainly show that in all months the northerly and north-easterly winds at Cherbourg are considerably stronger than at Hurst Castle, and that the southerly winds at Cherbourg fall considerably short in strength of those at Hurst Castle. The tables show that the strong winds coming from the sea are on an average one degree of Beaufort's scale (1–12) heavier than those coming from the land, while, with lighter or local winds, the difference often amounts to two degrees of the above scale. Information of this kind should be of use to fishermen and others when putting to sea.

M. PLANTAMOUR gives, in a recent number of the *Archives des Sciences*, the results of his eleventh year's observations of periodic movements of the ground, as shown by spirit-levels. It appears that, while in general the east side sinks with lowering of temperature, and rises with a rise, these movements do not always follow with the same rapidity. A sudden change of temperature produces at once a rise or sinking of the east side; but the maxima of the ground-positions rarely coincide with the maximum or minimum of temperature. This eleventh year is exceptional in that the extremes of temperature are but one or two days in advance of those of the movements, whereas in previous years the retardation has been a fortnight to four months behind minimum temperature, and a fortnight to three months behind maximum. In two years (1881 and 1885) the maximum of rise was even four days before the maximum of temperature. Thus, while temperature seems to be the chief cause of the oscillations, some other opposing cause must be at work. M. Plantamour compared the eleven years' mean effects with the variations in solar intensity, but failed to detect any relation.

CARL HESS, the German naturalist, has proved by minute microscopical investigation that the eye of the mole is perfectly capable of seeing, and that it is not short-sighted, as another naturalist (Kadyi) would have us believe. Hess maintains that, in spite of its minute dimensions,—1 millimetre by 0·9 millimetre—the eye of this little creature possesses all the necessary properties for seeing that the most highly-developed eye does; that it is, indeed, as well suited for seeing as the eye of any other mammal, and that in the matter of refraction it does not differ from the normal eye. In order to bear out the theory of short-sightedness, the physiological reason was adduced that in its subterranean runs the mole is accustomed to see things at close distances, and that its eye had become gradually suited to near objects. But to this Hess objects that the mole when under ground most probably makes no use of his eyes at all, as it would be impossible to see anything owing to the absence of light, but that when he comes to the surface, and especially when he is swimming, he does use his eyes. In order to accomplish this, he only has to alter the erect position of the hairs which surround and cover his eyes, and which prevent the entry of dirt when he is under ground, and at the same time to protrude his eyes forward.

IT seems rather strange that, while skins and eggs of the Great Auk are so highly valued, the public rarely hear of Pallas's Cormorant, the extinction of which in the North Pacific corresponds to that of the Great Auk in the North Atlantic. Only four specimens of Pallas's Cormorant are known to exist in museums; no one possesses its eggs; and no bones were found or preserved until Mr. Leonhard Stejneger, of the Smithsonian Institution, was so fortunate some years ago as to rescue a few of them. Yet this bird was the largest and handsomest of its tribe. So says Mr. Stejneger in an interesting paper—just issued by the Smithsonian Institution—in which he records how the bones referred to were found by him in 1882 near the north-western extremity of Behring Island. In an appendix to this paper Mr. Stejneger's "find" is fully and exactly described by Mr. Frederic A. Lucas.

WE have received the first two numbers of the *Scottish Journal of Natural History*. This monthly periodical is intended to be mainly a chronicle of the work done by the different Natural History Societies in Scotland; but short papers on subjects connected with Natural History will also be given, and we notice that articles have been promised by well known men of science, including Profs. James Geikie, G. J. Romanes, and many others. At present very few of the Scottish Natural History Societies print Transactions; so there is ample room for the new venture, and we wish it all success. Communications are to be addressed to the Editors, care of the publisher, Mr. W. B. Robinson, 194 Sauchiehall Street, and 105 New City Road, Glasgow.

THE first part of the Memoirs and Proceedings of the Manchester Literary and Philosophical Society for the current session has been issued. It contains a paper by Mr. Charles Bailey, on the discovery near Ribblehead of *Arenaria gothica*, a plant new to Britain, the typical form of which has so far been recorded only for two Swedish localities. The Ribblehead specimens are stated to be more robust than those from Sweden. The issue also includes a paper by Mr. Charles H. Lees on the law of cooling and its bearing on the theory of heat in bars; and the first part of Mr. Faraday's "Selections from the (unpublished) Correspondence of Colonel John Leigh Philips, of Mayfield, Manchester" (1761–1814). The latter includes letters from Dr. Henry Clarke (the mathematician), James Sowerby, and a number of other persons of local eminence during the latter half of the last century.

PROF. WEISMANN requests us to state that in his article on Heredity, printed in NATURE on February 6, the sentence beginning on p. 319, line 38, should have read—"Sir William Thomson, in endeavouring to make clear the dispersion of rays of light by conceiving of a molecule as consisting of hollow spheres enclosed one within the other and in contact with one another through springs, never believed," &c.

TWO gaseous fluorides of carbon, the tetrafluoride, $CF_4$, and the difluoride, $C_2F_4$, have been isolated, and form the subject of two simultaneous papers contributed to the current number of the *Comptes rendus*. One of these communications is from M. Moissan, whose energy in this domain of chemistry appears untiring. Unlike chlorine, fluorine directly attacks carbon with varying degrees of energy, according to the form in which the carbon is presented. When a current of pure fluorine is passed over the purest form of lamp-black, which has previously been freed from hydrocarbons by digestion with petroleum and boiling alcohol, combination occurs with such energy that the whole of the finely divided carbon becomes instantly incandescent. The lighter varieties of wood charcoal also take fire spontaneously in fluorine, the gas appearing to be first condensed for a few moments, and then the mass becomes suddenly incandescent and throws off brilliant scintillations. If the density of the charcoal is greater, and there is no loose dust upon its surface, it is necessary to warm it to 50°–100° C. in order to bring about combination and its accompanying incandescence. When once the incandescence is started at any spot it rapidly extends throughout the entire mass. Ferruginous graphite requires to be heated to a temperature just below dull redness, and gas retort carbon to full redness, in order to effect combination, while the diamond may be heated for any length of time over a

Bunsen lamp without any alteration in weight being noticeable. The products of combination are generally gaseous mixtures of $CF_4$ and probably $C_2F_4$. When the most readily attacked varieties of carbon are employed, and only in small quantities so as to avoid excess, the gas is almost pure $CF_4$. Carbon tetrafluoride is a colourless gas, which liquefies under a pressure of five atmospheres at 10° C. It is completely absorbed and decomposed by an alcoholic solution of potash with production of potassium fluoride and carbonate. On decomposing the latter salt with an acid the volume of carbon dioxide liberated is the same as that of the carbon tetrafluoride used. $CF_4$ is slightly soluble in water, more readily in carbon tetrachloride, alcohol, or benzene. Determinations of its density gave numbers which agreed with the formula $CF_4$. If excess of carbon is heated to redness in a platinum tube, and fluorine allowed to slowly stream through, another gas is obtained on collecting over water which is not capable of being absorbed by alcoholic potash. This gas liquefies at 10° under a pressure of 19–20 atmospheres. M. Moissan does not seem to have yet determined its composition, but it appears likely to be the $C_2F_4$ described in the second communication by M. Chabrié. M. Moissan also states that $CF_4$ may likewise be prepared by passing vapour of carbon tetrachloride over silver fluoride heated to a temperature of 300° C. in a glass or metal tube. M. Chabrié shows that both $CF_4$ and $C_2F_4$ may be obtained by heating the corresponding chlorides of carbon with silver fluoride in a sealed tube to 220° C. In an actual experiment 5·1 grams of AgF were heated with 1·55 grams of $CCl_4$ for two hours, at the end of which time the tube, which itself was but little attacked, was opened, and an almost theoretical yield of $CF_4$ obtained; the gas was totally absorbed by alcoholic potash in accordance with the equation $CF_4 + 6KOH = K_2CO_3 + 4KF + 3H_2O$. When $C_2Cl_4$ was used instead of $CCl_4$, a gas whose density corresponded to the formula $C_2F_4$ was obtained. The experimental density was 3·43; the calculated value for $C_2F_4$ is 3·46. The spectra of the two fluorides, according to M. Moissan, exhibit the lines of fluorine very clearly, together with several broad bands, resembling the flutings of carbon.

## OUR ASTRONOMICAL COLUMN.

### OBJECTS FOR THE SPECTROSCOPE.

Sidereal Time at Greenwich at 10 p.m. on February 20 = 8h. 3m. 7s.

| Name. | Mag. | Colour. | R A. 1890. | Decl. 1890. |
|---|---|---|---|---|
| | | | h. m. s. | ° ′ |
| (1) G.C. 1565 ... ... | — | — | 7 36 25 | − 14 29 |
| (2) 27 Cancri ... ... | 6 | Yellowish-red. | 8 20 39 | +13 1 |
| (3) β Cancri ... ... | 4 | Yellow. | 8 10 36 | + 9 32 |
| (4) ζ Canis Min. ... | 5 | White. | 7 46 0 | +12 3 |
| (5) 26 Pickering ... | Var. | Reddish-yellow. | 7 57 2 | − 12 47 |
| (6) S Cygni... ... ... | Var. | Reddish. | 20 3 14 | +57 40 |

*Remarks.*

(1) "Planetery nebula; pretty bright, pretty small; extremely little elongated." The spectrum has not yet been recorded.

(2) A star of Group II. Dunér states that the bands are very wide and dark in the red, but weaker in the green and blue. He does not, however, state what bands are present. Observations similar to those already suggested for other stars of the group are required.

(3) This is stated to have a fine spectrum of the solar type by Vogel. The usual differential observations are required.

(4) A star of Group IV. (Vogel). Usual observations required.

(5) This star has a very feeble spectrum of the Group VI. type, which has not yet been fully described.

(6) Although Cygnus is not now in the most convenient position for observations, it may still be observed soon after sunset. The variable, S Cygni, has not yet had its spectrum recorded, and the approaching maximum (February 28) may therefore be taken advantage of. Gore states the period as 323 days, and the range as from 8·8–10·1 at maximum to <13 at minimum. If it has a banded spectrum, as may be expected from the colour, the type of spectrum will probably not be difficult to determine, notwithstanding the faintness of the star.

A. FOWLER.

PROGRESS OF ASTRONOMY IN 1886.—An account of the progress of astronomy in the year 1886, by Prof. Winlock, has been issued from the Smithsonian Institution. Although the record is primarily intended to serve as a series of notes for those who have not access to a large astronomical library, the bibliography will be found useful to the professional astronomer as a reference list of technical papers. A considerable amount of useful information is given in this extract from the Smithsonian Report for 1886–87, the section devoted to reports of Observatories being very complete. A subject-index to the review has been effected by inserting the necessary page references to the bibliography.

THE MAXIMUM LIGHT-INTENSITY OF THE SOLAR SPECTRUM.—We have received from Dr. Mengarini his paper on the above subject (*Untersuchungen zur Naturlehre des Menschen und der Thiere*, xiv. Band, 2 Heft). After reviewing the previous work that has been done on the varying intensity of different parts of the spectrum, the author describes the three methods he used in his researches. The observations led him to conclude that the maximum of light-intensity is subject to variability in position from day to day and hour to hour, just as the maxima of thermal and chemical effects of the spectrum, although the sky be clear and the atmosphere steady. Using a prismatic spectrum, it was found that the maximum light-intensity fluctuated between about λ 564 and D, and, generally speaking, was more pronounced in the morning than in the afternoon. Some observations made at Rome in July 1881, on clear or slightly clouded days, showed that the maximum shifted from λ 564·1 to 584·3.

SPECTRUM OF BORELLY'S COMET, *g* 1889.—Mr. Backhouse, in a letter to the *Observatory*, notes that he observed the spectrum of this comet with a Browning miniature spectroscope on the 15th and 19th ultimo. The three CO bands were very vividly seen, but no other line; on the former date there was a very faint continuous spectrum, but on the latter only a suspicion of such.

SPECTRA OF δ AND μ CENTAURI.—Prof. Pickering, in a communication to *Astronomische Nachrichten*, No. 2951, records that an examination of the photographs of stellar spectra taken by Mr. S. J. Baily at the Harvard Observatory station, near Closica, Peru, shows that the F line due to hydrogen is bright in the spectra of the stars δ and μ Centauri.

ON THE STAR SYSTEM ξ SCORPII.—Some elaborate researches into the orbits of the components of this system were given by Dr. Schorr in an inaugural dissertation at Munich University last year. All available measures of position-angle and distance have been brought together and compared with those derivable from the new elements found, making the computation of great value.

## GEOGRAPHICAL NOTES.

ON Tuesday, Dr. Nansen lectured in Christiania on his plan for a North Pole Expedition. He advocates the employment of a ship built with a special view to strength, having its sides constructed at such an angle that, instead of being crushed by the ice, the vessel would be raised by it. The Expedition, he thinks, should advance through the Behring Straits, where the vessel would be carried northward by a favourable current. At the New Siberian Island the vessel would enter the ice-floes. It would then "proceed towards the North Pole, in which direction the current would probably carry it."

THE *Colonies and India* gives the last news from Cooktown relating to Sir William Macgregor's explorations in New Guinea. His project was to ascend the Fly River on another voyage of discovery. It seems that Sir William and his party, in a steam launch, dropped anchor in the river on December 14. The